

**Amendments to the Claims:**

The listing of claims will replace all prior versions, and listings, of claims in the application.

**Listing of Claims:**

1. (Cancelled)
2. (Cancelled)
3. (Cancelled)
4. (Cancelled)
5. (Cancelled)
6. (Cancelled)
7. (Cancelled)
8. (Cancelled)
9. (Cancelled)
10. (Cancelled)
11. (Cancelled)
12. (Cancelled)
13. (Cancelled)
14. (Cancelled)
15. (Cancelled)
16. (Cancelled)
17. (Cancelled)
18. (Cancelled)
19. (Cancelled)
20. (Cancelled)
21. (Cancelled)
22. (Cancelled)
23. (Cancelled)
24. (Cancelled)
25. (Cancelled)
26. (Cancelled)

27. (Cancelled)

28. (Cancelled)

29. (Cancelled)

30. (Cancelled)

31. (Cancelled)

32. (Cancelled)

33. (Cancelled)

34. (Cancelled)

35. (Cancelled)

36. (New) A circulating fluidized bed reactor comprising a reaction chamber connected by an acceleration duct to a centrifugal separator for separating particles from hot gases coming from the reaction chamber, and a rear cage, wherein at least part of the acceleration duct is inside the top of the reaction chamber, the centrifugal separator has substantially vertical walls in transversal section, and the centrifugal separator and the rear cage have a common wall.

37. (New) A circulating fluidized bed reactor comprising a reaction chamber connected by an acceleration duct to a centrifugal separator for separating particles from hot gases coming from the reaction chamber, and a rear cage, wherein at least part of the acceleration duct is inside the top of the reaction chamber, the centrifugal separator has substantially vertical walls in transversal section, and the reaction chamber and the rear cage have a common wall.

38. (New) A circulating fluidized bed reactor comprising a reaction chamber connected by an acceleration duct to a centrifugal separator for separating particles from hot gases coming from the reaction chamber, and a rear cage, wherein at least part of the acceleration duct is inside the top of the reaction chamber, the centrifugal separator has substantially vertical walls in transversal section, and the reaction chamber, the centrifugal separator and the rear cage collectively constitute a basic module.

39. (New) The circulating fluidized bed reactor according to Claim 38 further wherein the reaction chamber and the centrifugal separator have aligned exterior walls.

40. (New) The circulating fluidized bed reactor according to Claim 38 further wherein the power of the circulating fluidized bed reactor is a function of the number of basic modules used.

41. (New) The circulating fluidized bed reactor according to Claim 38 further wherein two adjacent basic modules have a common wall.

42. (New) The circulating fluidized bed reactor according to Claim 41 further wherein the wall common to two basic modules and between two centrifugal separators is a partial wall.

43. (New) The circulating fluidized bed reactor according to Claim 38 further wherein the reaction chambers of two adjacent basic modules are combined.

44. (New) The circulating fluidized bed reactor according to Claim 38 further wherein the rear cages of two adjacent basic modules are combined.

45. (New) A circulating fluidized bed reactor comprising a reaction chamber connected by an acceleration duct having an interior deflector to a centrifugal separator for separating particles from hot gases coming from the reaction chamber, and a rear cage, wherein at least part of the acceleration duct is inside the top of the reaction chamber, the centrifugal separator has substantially vertical walls in transversal section, and the interior wall of the reaction chamber includes the inlet deflector of the acceleration duct.

46. (New) The circulating fluidized bed reactor according to Claim 45 further wherein the inlet deflector of the acceleration duct consists of tubes diverted from the walls of the reaction chamber.

47. (New) The circulating fluidized bed reactor according to Claim 45 further wherein the inlet deflector of the acceleration duct is formed by rounding the tubes of the floor of the acceleration duct.

48. (New) The circulating fluidized bed reactor according to Claim 45 further wherein the floor of the acceleration duct is inclined toward the centrifugal separator.

49. (New) The circulating fluidized bed reactor according to Claim 45 further wherein the floor of the acceleration duct is inclined toward the extrados of the acceleration duct.

50. (New) The circulating fluidized bed reactor according to Claim 45 further wherein the gases are evacuated from the centrifugal separator via a vertical evacuation duct situated inside the centrifugal separator such that the gases are directed upwardly out of the centrifugal separator.

51. (New) The circulating fluidized bed reactor according to Claim 50 further wherein the vertical evacuation duct is placed in the middle of the centrifugal separator.

52. (New) The circulating fluidized bed reactor according to Claim 50 further wherein a deflector is placed at the top of the centrifugal separator.

53. (New) The circulating fluidized bed reactor according to Claim 52 further wherein the deflector has a section at least equal to that of the vertical evacuation duct, the position of the deflector is substantially aligned with that of the vertical evacuation duct, and the height of the deflector is less than that of the constant section portion of the centrifugal separator.

54. (New) The circulating fluidized bed reactor according to Claim 50 further wherein the centrifugal separator is carried by the vertical evacuation duct of the centrifugal separator.

55. (New) The circulating fluidized bed reactor according to Claim 45 further wherein the rear cage is horizontal.

56. (New) The circulating fluidized bed reactor according to Claim 45 further wherein the rear cage is situated under the centrifugal separator.

57. (New) The circulating fluidized bed reactor according to Claim 45 further wherein the rear cage is placed on concrete slabs.

58. (New) The circulating fluidized bed reactor according to Claim 45 further wherein a secondary separator is placed between the main centrifugal separator and the rear cage.